

ABSTRACT OF THE INVENTION

The present invention provides a method for isolating, identifying and cataloging partial messenger RNAs (mRNAs) or gene tags correlating to secreted and non-secreted proteins in a cell or tissue sample. The method requires obtaining a polynucleotide from a cellular homogenate, wherein the polynucleotide encodes the polypeptide and determining the sequence of the polynucleotide and its expression level. In essence, the method consists of two phases: (1) enrichment/purification of membrane-bound mRNA, and (2) sequence analysis. Neither of these processes, if performed independently of each other, would enable specific and rapid identification and enumeration of transcripts that encode secreted proteins and integral membrane bound proteins. This invention also provides computer-related systems and methods. More specifically, the invention provides a system and method for automatically generating a data base of gene tags corresponding to secreted and non-secreted proteins from cell or tissue samples and using the data base for filtering the tag counts from the samples into meaningful candidates for further testing and analysis.